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was also modified to include a 12 potentiometer sub-assembly, two 12 position wafer switches and certain simplifications to the memory drum, all of which are necessary to provide the power amplifier with coarse tune information. This combination of units will receive extensive testing during the next report period.

Design has been started on the three 50-60 cps power supplies which will replace their 400 cps equivalents for the power amplifier high voltage, low voltage and bias requirements. A transistorized inverter for furnishing single-phase 400 cps power to the coupler and power amplifier servo systems has been started. The system 28 vdc requirement has been firmed and a power supply has been designed and built in breadboard form to meet this need.

A preliminary design of the reader/reperforator tape transport mechanism has been completed and the first model will be assembled and tested next month.

Layout of the input/output wirewrap boards has been started and will continue into next month.

Environmental testing, circuit refinement and packaging of final modules continues. The first group of finished T-inverter modules was tested and found to meet specifications.

The receive and power amplifier drawer designs have been completed and hardware will be available within six weeks.

Detailed tests were run on the exciter and the results will be included in a subsequent AS-5 quarterly report. As a result of these tests, minor changes were made which will improve thermal efficiency within the oven.

TASK 6. RS-16A TEST POWER SUPPLIES

Work on this Task has been completed.

TASK 7. SERVICE AND SUPPORT

Three headsets for the reworked RS-16A field units were delivered to the Government during the reporting period.

TASK 8. AS-6 DATA TELEMETERING SYSTEM

Field Unit: The service test model of the AS-6 Field Unit has been completed and field testing has been started. The first test was between [redacted] Washington, and the Base Station lo- 25X1 25X1

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Initial tests of the Field Unit over this r-f path between proved to be reasonably successful and further revealed a number of minor circuit problems which must be corrected before the test starts. 25X1 25X1 25X1

Due to circuit temperature problems, which remained undetected until the time of the final testing of the service test model, the operating temperature range for this model must be restricted to the range of from -20°C to +55°C for both the transmission and reception modes of operation. This temperature range restriction, in the transmit mode of operation, is due mainly to the method of crystal compensation employed in the exciter. Operation in the receive mode at low temperatures, however, is hampered by about a 40 db rise in attenuation in the delay line. These problems will be corrected in the finished model by the use of different compensating networks and a special delay line properly compensated for operation at low temperatures.

Sub-assemblies for the deliverable units have been started.

Base Station: Fabrication and check-out of the Transmit and Receive Terminals were completed during the early part of April. Both terminals were installed at Contractor's test facility and then operated during the tests, starting April 24th. Although this equipment performed satisfactorily, a small number of changes and additions will be made following completion of the currently scheduled field tests. 25X1 25X1

The Transmit Terminal was thoroughly checked for proper interoperation with the 231D transmitter, with respect to channel control and r-f feed-back, and found to perform satisfactorily. 25X1

TASK 9. LINEAR EXCITER FOR THE AS-4A

This program has been delayed indefinitely pending decisions on the future course of the AS-4B Program. This action has been concurred in by the cognizant Government engineers.

TASK 10. FABRICATION OF RS-16B

Machining of all case castings and two top plates has been completed. Wiring of the two top plates is scheduled to begin early in the next reporting period. A prototype field unit has been assembled, except for power supplies, and is now undergoing tests.

All have been delivered by the machine shop vendor and their wiring and checkout is proceeding at a satisfactory pace. 25X1